

REMARKS

Reconsideration of this application, as amended, is respectfully requested. Claim 23 has been amended to obviate the rejection under 35 USC 112, second paragraph. The claim as amended clearly recites the subject matter that is patentable over the cited references.

The office action includes statements that reflect a basic misunderstanding of the present invention. For example, the office action asks whether the "energy states of the quantum well are not uniformly spaced in energy." As explained on page 9 of the Specification, the present transistor-like device does not rely on quantum wells for its operation (see, p.9, ll. 9-11). Indeed, it is for this reason that the present claims are patentable over the Luryi reference.


The Luryi reference describes a negative transconductance device that, like all resonant tunneling devices, relies on a quantum well for a conduction path. In contrast, the present claims recite a scheme wherein a conductance path is formed between tunnel junctions, each having less than approximately a quantum resistance. Luryi makes no reference whatsoever to the quantum resistance of the tunnel barriers in his resonant tunneling device. Instead, he relies on the properties of the quantum well as discussed above. Because the present claims recite a method which is fundamentally different from that of Luryi, the claims are patentable over this reference.

If are any additional fees required, please charge our Deposit Account No. 02-2666.

Respectfully submitted

BLAKELY SOKOLOFF TAYLOR & ZAFMAN LLP

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Tarek N. Fahmi
Reg. No.: 41,402

12400 Wilshire Boulevard
Seventh Floor
Los Angeles, California 90025
(408) 720-8598

VERSION OF CLAIMS WITH MARKINGS TOP SHOW AMENDMENTS:

- 1 23. (Amended) A method, comprising forming a conduction path between a pair of tunnel
- 2 junctions each having a resistance less than or equal to approximately a quantum
- 3 resistance by shifting energy states of an island formed of a material having a non-
- 4 uniform density of [such] energy states, the island being disposed between the tunnel
- 5 junctions.